

USSR

UDC 547.944/945

ZUNNUNZHANOV, A., ~~ISKANDAROV, S.~~ YUNUSOV, S. YU., Order of the Red Banner of Labor Institute of the Chemistry of Plant Substances of the Uzbek SSR Academy of Sciences

"Darvasamin, a New Alkaloid from Leontice Darvasica"

Tashkent, Khimiya Prirodnykh Soyedineniy, No 6, 1971, pp 851-852

Abstract: The separation of the mixture of alkaloids from the above-ground part of Leontice darvasica was continued after separation of taspin, N-methylcytisine and darvasin [S. Iskandarov, et al., KhPS, 132, 1969]. Infrared and nuclear magnetic resonance spectral data are presented for the new alkaloid which was isolated -- darvasamin with a melting point of 102° the composition $C_{15}H_{24}N_2O$, $[\alpha]_D + 72^\circ$. Darvasamin is the first natural isomer of cis-series matrine:



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Alkaloids

USSR

UDC 547.944/945

SHAYMARDANOV, R. A., ~~ISKANDAROV, S.~~ and YUNUSOV, S. YU., Red Banner of Labor
Institute of Plant Chemistry, Uzbek Academy of Sciences

"New N-Substituted Derivatives of Cytisine"

Tashkent, Khimiya Prirodnykh Soyedineniy, No 3, 1971, pp 383-384

Abstract: Thanks to its wide distribution and strong physiological activity, cytisine is a favorable basis for producing various N-substituted derivatives which may be of value in determining the connection between structure and physiblogical activity.

Continuing the work of earlier researchers begun on this basis, the authors obtained derivatives of cytisine and N-(β -oxy, γ -aminopropyl) cytisine, with dialkyl esters of phosphorous acid (2 moles of cytisine were dissolved in a chloroform-CCl₄ mixture, to which was added 1 mole of the dialkyl ester of phosphorous acid). From the resulting precipitate (cytisine chlorohydrate) by various additions (methanol, ammonia, and dialkyl esters of phos. acid) were then produced seven N-substituted derivatives -- C₁₅H₂₃N₂PO₄, C₁₇H₂₇N₂PO₄, C₁₉H₃₁N₂PO₄ (two compounds, the dibutylphosphate and the diisobutylphosphate), C₁₄H₂₁N₃O₂, C₂₀H₃₄N₃PO₅, and C₂₂H₃₈N₃PO₅.

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SHAYMARDANOV, R. A., et al., Khimiya Prirodnikh Soyedineniy, No 3, 1971,
pp 383-384

For these seven compounds, yield factors as well as molecular weights,
and several other physical constants, and molecular structures, were determined.

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UDC 547.944/945

TKESHELASHVILI, E. G., ISKANDAROV, S., MUDZHIRI, K. S., and YUNUSOV, S. YU.,
Institute of Pharmacology imeni I. G. Kutateladze, Georgian Academy of
Sciences, and Red Banner of Labor Institute of Plant Chemistry, Georgian
Academy of Sciences

"Alkaloids of *Leontuce Smirnovii*"

Tashkent, Khimiya Prirodnikh Soyedineniy, No 4, 1971, pp 539-540

Abstract: *Leontuca Smirnovii* (Berberidaceae family), widely distributed in the Georgian SSR, is a very rich source of alkaloids, chloroform extraction of the root mass yielding 4%. Paper and thin-layer chromatography have revealed the presence of eight different alkaloids in this plant.

The authors were able to separate chemically three of these alkaloids from the roots of L. S., belonging to the diphenyl, pavine and quinolizidine groups. Treating a chloroform extract with 5% sulfuric acid produced grayish sulfate crystals, which charred above 360°C; direct comparison of the melting points of mixed samples and infrared spectra of the base with those of taspine, established the identity of the two.

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Alkaloids

UDC 547.94+543.42

USSR

ISKANDAROV, S., KAMALITDINOV, D. Dzh., YAGUDAYEV, M. R., and YUNUSOV, S. Yu.,
~~Order of the Red Banner~~ Institute of Natural Products Chemistry, Acad. Sc.
UzSSR

"Derivatives and Stereochemistry of Matrin Alkaloids"

Tashkent, Khimiya Prirodnikh Soyedineniy, No 2, 1971, pp 174-179

Abstract: α -Substituted derivatives of isomeric matrins were synthesized and studied by IR, NMR, mass spectroscopy and ORD. Soforidin dissolved in a mixture of SOCl_2 and SO_2Cl_2 was refluxed for 1 hr. The solvent was removed, the residue treated with a 5% ammonia solution, and extracted with ether and chloroform. Chromatography over silica gel gave dichlorosoforidin, m.p. 128-130°, $[\alpha]_D = +19^\circ$. Analogously the dichloroleontin, m.p. 158-159° and dichloromatin were obtained. To prepare dichloroisosoforidin, m.p. 152°, $[\alpha]_D = -114.8^\circ$ the above reaction had to be extended to 3 hrs. Shaking the dichloroalkaloids dissolved in alcohol with PtO_2 produced monochloro derivatives: monochlorosoforidins: A- an oil, $[\alpha]_D = +17^\circ$ and B- a solid, m.p. 140-141°, $[\alpha]_D = +30^\circ$; monochloroleontin, m.p. 139-140°, $[\alpha]_D = -17^\circ$; α -monochloromatin, m.p. 106-107°, $[\alpha]_D = +29^\circ$ and monochloroisosoforidin chlorohydrate, m.p. 273-275°. Monochloroisosoforidin itself is an oil

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ISKANDAROV, S., et al., Khimiya Prirodnikh Soyedineniy, No 2, 1971, pp 174-179

$[\alpha]_D = -75^\circ$, which could be converted to dehydroisosofoforidin by a reaction with sodium iodide and lithium carbonate in dimethylformamide; the product had a m.p. 97-98°, $[\alpha]_D = +50^\circ$.

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UDC 547.944/945

USSR

SHAYMARDANOV, R. A., ISKANDAROV, S., and YUNUSOV, S. Yu., Order of the
Red Banner Institute of Natural Products Chemistry, Acad. Sci. USSR

"Study of the Alkaloids *Thermopsis Alterniflora*"

Tashkent, Khimiya Prirodnikh Soyedineniy, No 2, 1971, pp 169-174

Abstract: The above-ground portion of *Thermopsis alterniflora* collected on the 16 April 1968, when it just began to bloom, was studied. Chloroform extraction gave a 3.35% total content of alkaloids consisting of citizine, N-methylcitizine, pachycarpine, termopsin, and a new alkaloid alteramine. On the basis of physical properties and IR spectra alteramine is believed to be 11-allyl-N-methylcitizine.

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1/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--ALTERAMINE A NEW ALKALOID FROM THERMOPSIS ALTERNIFLORA -U-

AUTHOR--(03)--SHAYMARDANOV, R.A., ISKANDAROV, S., YUNUSOV, S.YU.

COUNTRY OF INFO--USSR

SOURCE--KHIM. PRIR. SOEDIN. 1970, 6(2), 276-7

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PROCESSED PLANT PRODUCT, ALKALOID, SOLVENT EXTRACTION,
CHLOROFORM, UV SPECTRUM, IR SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/0454

STEP NO--UR/0393/70/006/002/0276/0277

CIRC ACCESSION NO--AP0132669

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0132669

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXTN. OF THE OVER EARTH PARTS OF T. ALTERNIFLORA WITH CHCL SUB3 GAVE 3.35PERCENT OF ALKALOIDS; ET SUB2 O DISSOLVED PACHYCARPINE, ISOLATED AS THE HCLP SUB4 SALT, M. 171DEGREES, CHROMATOG. OF THE CHCL SUB3 SOLN. GAVE N-ACETYLCYTISINE AND CYTISINE; FROM THE MOTHER LIQUORS, A NEW ALKALOID ALTERAMINE (I), C SUB15 H SUB20 ON SUB2, M. 112DEGRES, (ALPHA) MINUS 43DEGREES (HCL SUB4 SALT M. 234-5DEGREES; HI SALT M. 212-13DEGREES, PICRATE M. 215-16DEGREES, HCL SALT M. 185-60DEGREES, MEI SALT M. 225-6DEGREES) WAS OBTAINED. HYDROGENATION WITH RANEY NI GAVE A DIHYDRO DERIV. WITH (ALPHA) SUBO MINUS 100DEGREES; HCL SUB4 SALT M. 272DEGREES. UV AND IR SPECTRA, AS WELL AS CRO SUB3 OXIDN. SUPPORT A TRICYCLIC ALKALOID OF THE CYTISINE STRUCTURE WITH A PROPYL SIDE CHAIN FOR I. FACILITY: INST. KHIM. RAST. VESHCHSTV, TASHKENT, USSR.

UNCLASSIFIED

USSR

ISKANDAROV, T. I., Candidate of Medical Sciences, Uzbek Scientific Research Institute of Sanitation, Hygiene and Occupational Diseases

"Health Education Work -- a Basic Factor in Prevention of Pesticide Intoxications in Uzbekistan"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 9, Sep 70, pp 23-29

Abstract: Extensive use of insecticides in cotton growing in Uzbekistan brings large numbers of people in contact with toxic chemicals either directly through work, or via the environment during cultivation. Most intoxications (67% caused in 1969 by methyl mercaptophos, 14.5% by DDT) have resulted from: lack of knowledge of hygiene, toxicology, and prophylaxis; premature entry into treated fields; the presence of people in the fields during spraying; and so forth. Simultaneously with measures taken by the government such as replacement of toxic chemicals with less toxic ones, the population needs extensive education by specialists in hygiene and toxicology. Such education has in recent years been reaching tens of thousands of people in every region of Uzbekistan, with a resultant 72% drop in acute intoxications between 1965 and 1969. The program aims to teach people to use toxic pesticides properly, follow sanitary-hygienic requirements during work, report to a physician at the first sign of illness, and get regular instruction.

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ISKANDAROV, T. I., Meditsinskiy Zhurnal Uzbekistana, No 9, Sep 70, pp 23-29

Medical therapists must also know the clinical course of intoxications, first aid, and preventive measures. Wide use of visual aids, local press, radio and motion pictures is being made and is strongly recommended.

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Public Health, Hygiene and Sanitation

USSR

UDC 613.632-001-004(575.1)+632.95(025)

ALABAYEV, SH. T., Professor and ISKANDAROV, T. L., Senior Scientific Associate, Uzbek Scientific Research Institute of Sanitation, Hygiene and Occupational Diseases and the Tashkent Order of Labor Red Banner Institute of Medicine

"Theoretical and Practical Aspects of Hygiene During Exposure to Pesticides in Hot Climates"

Tashkent, Meditainskiy Zhurnal Uzbekistana, No 8, Aug 73, pp 16-13

Abstract: The rapid rise in the use of pesticides in the area around Uzbekistan has made it necessary to study such aspects as proper handling of, maximum exposure to, toxicity of these compounds and clinical symptoms and treatment of overdoses. Also important are the mechanisms for the removal of the pesticides such as DDT, aldrin, and other chlorinated hydrocarbons from the natural environment and their effects on plants and animals. The rate of uptake of particular compounds and combinations thereof by plants was studied as a function of temperature; the LD_{50} was also determined. At higher temperatures ($35 \pm 2^{\circ}C$), the LD_{50} was reduced significantly. Eight topics are proposed for future research, such as more detailed clinical diagnosis of pesticide

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USSR

ALABAYEV, SH. T., and ISKANDAROV, T. I., Meditainskiy Zhurnal Uzbekistana,
No 8, Aug 73, pp 16-23

poisoning, a study of the metabolism of pesticides, immunological reactions
of animals, the mechanism of enhanced pesticidal activity at higher temperatures
and others.

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1/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--PROBLEMS IN DESIGN AND BUILDING OF SEA PIPELINES --U--
AUTHOR--ISKENDEROV, I.A.
COUNTRY OF INFO--USSR, CASPIAN SEA
SOURCE--VOFOSY PROYEKTIROVANIYA I STROITEL'STVA MORSKIKH TRUBOPROVODOV,
BAKU, AZERB. GOS. IZD-VO, 1970, 299 PP
DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--GENERAL CONSTRUCTION, UNDERWATER FACILITY, PIPELINE
TRANSPORTATION SYSTEM, CORROSION PREVENTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3006/0022

STEP NO--UR/0000/70/000/000/0001/0279

CIRC ACCESSION NO--AM0133909

UNCLASSIFIED

2/2 014
CIRC ACCESSION NO--AM0133909
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--13NOV70

EDITOR 3. PREFACE 5. INTRODUCTION 7. CHAPTER I GENERAL DATA ON
SEA PETROLEUM EXTRACTION AND ON UNDERWATER PIPELINES 12. II
INVESTIGATION OF NATURAL CONDITIONS OF THE WATER AREA IN CONSTRUCTION
17. III CONSTRUCTION OF SEA PIPELINES 41. IV RESISTANCE OF SEA
PIPELINES UNDER THE EFFECT OF WAVES AND CURRENTS 62. V PROTECTION OF
SEA PIPELINES AGAINST CORROSION 127. VI LAYING OF SEA PIPELINES 148.
VII DESIGN AND CONSTRUCTION OF SEA PIPELINES IN THE USSR AND ABROAD
187. VIII DESIGN AND EXPERIMENTAL CONSTRUCTION OF AN UNDERWATER GAS
SEA PIPELINES 276. APPENDIX 280. BIBLIOGRAPHY 294. THE BOOK
DEALS WITH DEVELOPMENT STAGES OF PETROLEUM AND GAS EXTRACTION FROM
CASPIAN SEA DEPOSITS AND PROBLEMS OF TRANSPORTATION OF WELL PRODUCTS
ALONG UNDERWATER PIPELINES. THE BOOK WAS WRITTEN FOR SCIENTISTS,
ENGINEERS AND TECHNICIANS WORKING ON DESIGNS AND CONSTRUCTION OF SEA
PIPELINES; IT CAN BE USED AS A TEXTBOOK BY PROFESSORS AND STUDENTS OF
TECHNICAL EDUCATIONAL INSTITUTIONS.

UNCLASSIFIED

USSR

UDC[537.226+537.311.33]:[537+535]

ABDULLAYEV, G. B., and ISKENDER-ZADE, Z. A.

"Some Questions in the Physics of Electron-Hole Junctions"

Nekotoryye voprosy fiziki elektronno-dyrochnykh perekhodov (cf. English above),
Baku, "Elm," 1971, 246 pp, ill, 1 r. 30 k. (from FZh-Fizika, No 10, Oct 71,
Abstract No 10YE705K)

Translation: Contents of book. Chapter I. Some Concepts of the Electrical
Conductivity of Semiconductors; Chapter II. Physical Processes in p-n Junc-
tions; Chapter III. p-n Junction-Type Semiconductor Devices. Bibliography.

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ISKENDER-ZADE, Z.A.

Physics

JPRS 5:074
10 December 1971

REACTANCE INVERSION OF (p - n)-JUNCTIONS

Article by Corresponding Member of the USSR Academy of Sciences G. B. Adzhizadev, Z. A. Iskender-Zade, E. A. Dehfarova, N. R. Akhundov, Sh. A. Alkhanova, Physics Institute of the Azerbaijan SSR Academy of Sciences, Baku, Azerb. Doklady Akademii Nauk SSSR, Russian, Vol 200, No 2, 1971, Submitted 11 March 1971, pp 314-315

Physical phenomena caused by generation-recombination processes form the basis for operation of devices with (p - n)-junctions. The in- levels of these processes occurring in wide-band semiconductors via local levels in the forbidden band leads to the occurrence of a phase shift between the current and voltage on application of a variable signal to the (p - n)-junction. The reactance inversion of the (p - n)-structure (the conversion of capacitive reactance into inductive reactance) is observed both for forward [1-3] and return [3, 4] shifts. In the case of a forward shift, the dependence of U_{inv} on the concentration of the alloying admixture in the base region [3] and the inversion during photoinjection [5] show that the latter is observed in coincidence of the concentrations of the injected and equilibrium majority carriers. The inversion voltage for the sharp junctions given in [2] and for the smooth junctions under the condition of $uT \approx 1$ is expressed [3] as

$$U_{inv} \approx \frac{kT}{q} \ln \frac{N - n_i^2}{n_i^2} \quad (1)$$

where N is the concentration of the alloying admixture in the base, or

$$U_{inv} = \frac{\Delta E_g}{q} - 2 \frac{kT}{q} \ln \frac{N - n_i^2}{n_i^2} \quad (1')$$

where N , P , n_i are the effective density of states in the c and v-bands.

The goal of this paper is experimentally to check the validity of formula (1') indicating the linear dependence of U_{inv} on ΔE_g , to discover the

Crystals & Semiconductors

USSR

ABDULLAYEV, G. B., ~~ISKENDER-ZADE, Z. A.~~, AKHUNDOV, M. R., DZHAFAROVA, E. A.,
ALIKHANOVA, Sh. A., Institute of Physics

"Reactive Properties of Diffusion Silicon Barrier-Layer Cells"

Baku, Izvestiya Akademii Nauk Azerbaydzhanskoy SSR, Seriya Fiziko-Tekhnicheskikh
i Matematicheskikh Nauk, No. 4, 1970, pp 65-70

Abstract: The reactive properties of diffusion silicon photocells in which a high level of injection was developed both by an external voltage and by illumination of the photocell by intense light in order to produce a high injection level on which the capacitance transforms into an inductance without the application of a constant external displacement by intense illumination or photoinjection are studied. An investigation of the barrier capacitance of p-Si barrier-layer cells at voltages 0-30 v, temperatures 273-370°K, and frequencies 5-600 kHz showed that the dependence of the capacitance on voltage is determined by a linear distribution of the electroactive admixture in the transition region with a concentration gradient $(7-9) \cdot 10^{20} \text{ cm}^{-4}$. It is shown that the capacitance of the cell under illumination and under the condition $\omega\tau \geq 1$ transforms into an inductance without external voltage. This transition of capacitance into inductance

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USSR

ABDULLAYEV, G. B., et al, Izvestiya Akademii nauk Azerbaydzhanskoy SSR, Seriya fiziko-tekhnicheskikh i matematicheskikh nauk, No. 4, 1970, pp 65-70

under illumination without external displacement is said to be direct support for the injection mechanism for the origin of inductance. It was established that the inversion voltage decreases almost linearly with an increase in the light intensity.

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USSR

UDC 535.322.4.06

ALMASHIN, A. S., ~~ISKHAKOV, B. O.~~, KOZHEVNIKOVA, N. V.

"Photoelectric Sighting Device in the IRF-452 Refractometer and Analysis of Its Operating Accuracy"

Dokl. Vses. soveshch. Optich. i titrometrich. analizatory zhidk. sred. 1971, Ch. 2 (Reports of the All-Union Conference on Optical and Titrometric Analyzers of Liquid Media, 1971, Part 2), Tbilisi, 1971, pp 73-79 (from Radiotekhnika i Elektronika, No 3, Mar 72, Abstract No 3.32.1047)

Translation: The optical schematic of the IRF-452 laboratory refractometer based on the U-prism method and equipped with a special photoelectric device which insures objective sighting and broadening of the spectral measurement range to 2.5 microns is presented. The refractometer is designed to determine the index of refraction and dispersion of solid and liquid states with an accuracy to $2 \cdot 10^{-5}$. The results of experimental testing demonstrated satisfactory reproducibility of the readings in the spectral range from 436.7 to 250 nm with complete insurance of the accuracy requirements for measuring the index of refraction to $2 \cdot 10^{-5}$. The bibliography has 3 entries.

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USSR

UDC 621.373.826:550.3

VARDANYAN, A. S., ISKHAHOV, I. A., SUKHONIN, Ye. V., and SOKOLOV, A. V.

"Measurement of Atmospheric Absorption in the Wavelength Range of $\lambda = 980-1600$ Microns" by the Radioastronomical Method"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses--collection of works) "Nauka," 1972, pp 61-65 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10D380)

Translation: The described method is based on relative measurements of the sun's radiation, attenuated by the atmosphere, at various values of its elevation above the horizon. For the measurements, a radiotelescope with an immersion detector of n-type InSb was used. The measurements were made at sea level in the temperate latitudes. The minimum measured absorption value was obtained for the 1260 micron wave in water vapor and in the transparency window, and was equal to about $0.6 \text{ dB/hr} \cdot \text{m}^{-2}$ at $\theta = 0^\circ$.
A. K.

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USSR

UDC: 621.391.2:621.396.96

BABKIN, Yu. S., ZIMIN, N. N., IZYUMOV, A. O., ISKHAKOV, I. A., SOKOLOV, A. V.,
STROGANOV, L. I., SUKHONIN, Ye. V., SHABALIN, G. Ye.

"Measurement of Rain Attenuation on a 0.96 mm Wave Over a 1 km Route"

Moscow, Radiotekhnika i Elektronika, Vol 15, No 12, Dec 70, pp 2451-2453

Abstract: An investigation is made into attenuation in rains of varying intensity and a relationship is found between the attenuation and the mass of water precipitated in a given time interval. The transmitter was a frequency-stabilized unit based on a backward-wave oscillator, and the receiver used an indium antimonide detector cooled to liquid helium temperatures. Rotating one-meter Cassegrain antennas were used. Rainfall was registered by three P-2 recording rain gauges placed at both ends and in the middle of the 1 km transmission path. Temperature, pressure, humidity and wind speed were also measured. Attenuation on a 0.96 mm wave was determined from the change in signal level at the receiver during rains. For rain intensity of 0.12 mm/hr (covering more than 99% of all cases) the attenuation on a 0.96 mm wave in decibels per kilometer is approximately $1.53 \cdot I^{0.038}$, where I is rain intensity in mm/hr. This is 2.5-3 times the attenuation observed on a wave of 8.6 mm.

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USSR

UDC: 621.391.2

BABKIN, Yu. S., ISKHAKOV, I. A., SOKOLOV, A. V., STROGANOV, L. I., SUKHONIN, Ye. V.

"On the Problem of Attenuation of Emission on a 0.96 mm Wave in Snow"

Moscow, Radiotekhnika i Elektronika, Vol. 15, No 12, Dec 70, pp 2459-2462

Abstract: This work was done to study attenuation on a 0.96 mm wave on a 680 m transmission path in snows of up to 2 mm/hr expressed in the amounts of water precipitated. The experimental part of the work was done in 1969-1970 in the central European section of the Soviet Union. Precipitation was measured by three P-2 recording rain gauges placed at both ends of the transmission path and in the middle. Temperature, pressure, humidity and wind speed were measured at the same time. Rotating one-meter Cassegrain antennas were used. It was found that attenuation in rains of the same intensity (2 mm/hr) is approximately 30-40% lower. A strongly idealized calculation is given within the framework of Mie theory for attenuation in snows. The results agree satisfactorily with experimental data if the effective radii of spherical snow particles are interpolated. The authors thank M. A. Kolosov for advice and for remarks made during the work.

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USSR

UDC 530.12:531.51

ISKHAKOV, I. F.

"Polarization Effects During Electron Scattering in the Gravitational Field of a Rotating Body"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Fizika, No 4, 1971, pp 38-42

Abstract: An analytical study was made of the interaction of a quantized spinor field with a classical Einstein gravitational field. A weak gravitational field permitting expansion of all the gravitational variables with respect to a small addition to the density of the contravariant metric tensor is considered.

$$\sqrt{-g} g^{\mu\nu} = \epsilon^{\mu\nu} - h^{\mu\nu} \equiv \epsilon^{\mu\nu} - \sqrt{\kappa} \gamma^{\mu\nu},$$

where $\kappa = \frac{8\pi\gamma}{c^4}$ is the Einstein constant. The density of the Lagrange

spinor field in curved space and the Lense-Thirring metric are calculated, and two cases connected with different directions of the angular momentum of the central body are analyzed.

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Polymers and Polymerization

USSR

UDC 678.742.2-137.46.22:66.018.36

TERTERYAN, R. A., LESHCHENKO, S. S., LIVSHITS, S. D., GOLOSOV, A. P.,
ITSIKSON, L. B., MONASTYRSKIY, V. N., KARPOV, V. L., SOBOLEVA, N. S.,
MAL'TSEVA, A. P., and ISKHAKOV, L. I.

"Radiation Stability of Ethylene and Styrene Copolymers"

Moscow, Plasticheskiye Massy, 7, 1973, pp 3-5

Abstract: A study was made of the continuous statistical copolymerization of ethylene monomers (E) with styrene (S) under conditions similar to those under which low density polyethylene is produced and also of the behavior of E + S polymers in an ionizing radiation field. The results of copolymerization studied -- grams of copolymer/hr concentration of S in the polymer, density, and others -- are given as a function of styrene concentration and pressure at 200°C. An increase in the concentration of S in the reaction mixture leads to a decrease in the copolymer yield, in its characteristic viscosity, in its melting temperature, and its crystallinity, and to an increase in the density. The presence of S monomers in the polyethylene chains and the chemical bonds between them and the methylene groups significantly increases the resistance of the material to α -radiation damage. The gases evolved during the radiation of various types of polymers were determined.

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USSR

UDC 539.214;539.374

ISKHAKOV, M. D.

"One Boundary Value Problem on the Elastic-Plastic State of a Cylinder of Circular Cross Section and Finite Height"

V sb. Vopr. vychisl. i prikl. mat. Vyp. 12 (Problems of Computer and Applied Mathematics. No. 12 -- Collection of Works), Tashkent, 1972, pp 167-170 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V445)

Translation: The solution of the elasticity problem for a cylinder of finite length, on the end surface of which are assigned arbitrary displacements that can be expanded in Fourier series, is sought in permutations. The angular and radial displacements and also the derivative of the axial coordinate with respect to the axial displacement is set equal to zero at the ends. The theory of small elastic-plastic deformations of Il'yushin for a linearly strengthened body is used. The solution of the equilibrium equations is sought in series in a cylindrical coordinate system. V. I. Van'ko.

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Nuclear Physics

3

USSR

UDC: 539.172.12

AZIMOV, S. A., ARIKHAHOV, U. R., GULYAMOV, M., ISLAMOV, B. I.,
ISKHAKOV, T., FAYZULLAYEV, U. I., ERGASHOV, E., Institute of
Nuclear Physics, Academy of Sciences of the Uzbek SSR

"The Reaction ${}^7\text{Li}(\text{pn}){}^7\text{Be}$ at $E_p = 17.5$ MeV"

Moscow, Izvestiya Akademii Nauk SSSR: Seriya Fizicheskaya,
Vol 36, No 1, Jan 72, pp 173-174

Abstract: The neutron spectrum of the reaction ${}^7\text{Li}(\text{pn}){}^7\text{Be}$ is studied on a proton beam in the U-150 cyclotron at the Institute of Nuclear Physics at the Academy of Sciences of the Uzbek SSR, using a multichannel, fast-neutron, time-of-flight spectrometer. The measurements were made at a proton energy of 17.5 MeV. The experimental data enabled the authors to distinguish neutron groups n_0 and n_1 corresponding to the ground and excited states of ${}^7\text{Be}$ ($E^* = 0.43$ MeV). Differential cross sections of the reaction are presented, with formation of neutron groups corresponding to the ground and excited states ($E_1^* = 0.43$ MeV and $E_2^* = 4.55$ MeV). All curves have a

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USSR

- . AZIMOV, S. A. et al., IAN SSSR: Ser. Fiz., No 1, 1972, pp 173-174
diffraction structure with a first maximum at $\theta = 0^\circ$ for n_0
and n_1 and a first maximum at $\theta = 20^\circ$ for group n_2 . The curves
for n_1 and n_2 are antisymbatic. Three figures, bibliography
of six titles.

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USSR

UDC: 624.042.8

ISKHAKOV, Ya. Sh., Candidate of Technical Sciences and TIKHOMIROV, I. V.,
Engineer

"Dynamic Parameters and Seismic Stability of Reinforced Concrete Shell Panel
Roofing"

Beton i Zhelezobeton, No 9, 1972, pp 14-16.

Abstract: Dushanbe plant No. 1 has begun producing precast, prestressed reinforced concrete curved roofing panels measuring 3 by 18 m in plan. These panels are designed to be used as roofing over one-story commercial buildings. The panels were tested for strength and impact resistance. The impact loading, imitating a seismic loading, was applied 11 times, four times corresponding to a seismic loading of 7 and 8 points, three times corresponding to a loading of 9 points. The panels withstood the load applied in the most unfavorable direction. The panels are recommended for use in construction.

1/1

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ISKHAKOVA, KH. I., Chair of Microbiology, Tashkent Institute for
Advanced Training of Physicians

"The Effects of Typhoid and Paratyphoid Toxins on Phagocytosis"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 1, 1970, pp 37-38

Abstract: Recent publications suggest that in addition to endotoxins, typhoid and paratyphoid bacteria also produce soluble exotoxins. The objective of this study was to investigate the effect of these exotoxins on phagocytosis since, according to the literature, true toxins (exotoxins) significantly inhibit the phagocytotic function of leukocytes. Concentrated cultures of typhoid and paratyphoid bacteria were grown according to the Birch-Hirschfeld method, washed with saline, and centrifuged. The clear supernatant fluid was designated native soluble toxin. Aliquots of typhoid and paratyphoid bacteria cultures and of diluted and undiluted toxin solutions were added to blood samples from donors with no previous typhoid history or vaccinations. The mixture was incubated for two hours with nutrient material. The results were determined according to the state of bacterial cells. Addition of undiluted toxin reduced the phagocytotic number (as compared to the controls) from 3.9 to 3.0, and the phagocytotic index from 56% to 43%. The final stage
1/2

USSR

ISHAKOVA, KH. I., et al., Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 1, 1970, pp 37-38

of phagocytosis -- intracellular digestion -- was reduced from 71.4% to 64.8%, while the proliferation index was increased from 1.3 to 1.7. Solutions of the toxin diluted 1:10 and 1:100 inhibited the phagocytic reaction of leukocytes to a much smaller degree.

2/2

1/2 006 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--DETERMINATION OF THE CORRELATION OF EXCHANGE INDEX WITH COLUMN
DIAMETER -U-
AUTHOR--(02)-AZIZOV, KH.F., ISKHAKOVA, N.I. I
COUNTRY OF INFO--USSR
SOURCE--UZB. KHIM. ZH. 1970, 14(1), 18-19
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--EXCHANGE REACTION, SODIUM CHLORIDE, CATION EXCHANGE RESIN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/1714 STEP NO--UR/0291/70/014/001/0018/0019
CIRC ACCESSION NO--AP0125335
UNCLASSIFIED

2/2 006

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0125335

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE CONVERSION DEGREE (1) WAS
DETC. EXPTL. DURING EXCHANGE REACTIONS RH PLUS NACL FORMS AND IS FORMED
FROM RNA PLUS HCL ON A STRONGLY ACID CATION EXCHANGER. I DOES NOT
DEPEND EITHER ON THE COLUMN HEIGHT OR ON ITS DIAM. THE UTILIZATION
DEGREE OF THE EXCHANGER DECREASES WITH DECREASE IN COLUMN HEIGHT AND
WITH INCREASE IN ITS DIAM. FACILITY: INST. KHIM., TASHKENT,
USSR.

UNCLASSIFIED

USSR

UDC 533.99

BAYKOV, A. P., BELAGO, V. A., ISKOL'DSKIY, A. M., GERASIMOV, L. S.,
and NESTERIKHIN, Yu. Ye.

"Investigation of the Electrical Explosion of Foils"

Novosibirsk, Fizika goreniya i vzryva, No 2, 1973, pp 286-291

Abstract: For certain applications of the electrical explosion of metal foils, it is advisable to investigate the conditions for uniformity of such explosions -- a topic which, in the authors' opinion, has not been given sufficient attention. The purpose of this paper, therefore, is to make that investigation and to look into the possibility of using the foil as a distributed detonator. An earlier paper by the first-named of the authors above (ZhTF, 1973, vol 43, 1) showed that for wires with $d \geq 10^{-3}$ cm, the explosion is uniform for initial current densities $j \geq 10^6$ A/cm. Thus, in the experiments of the present paper, the parameters of the LC circuit setting off the explosion were chosen for a current density of 10^7 - 10^8 A/cm². The subject was aluminum foil, 10^{-3} cm thick, 15 cm long, and 2-4 cm wide, exploded in air. The circuit for the experiment is shown, involving oscillographical, optical, and x-ray observation methods. The authors thank A. A. Deribas and A. N. Dremis for their useful comments.

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USSR

UDC: 537.529

BAYKOV, A. P., ISKOL'DSKIY, A. M., and NESTERIKHIN, Yu. Ye.,
Institute of Automation and Electrometry, Novosibirsk

"Electrical Explosion of Wires Under High Energy Velocities"

Leningrad, Zhurnal tekhnicheskoy fiziki, No 1, 1973, pp 136-140

Abstract: If an energy level close to the energy of sublimation is put into a conductor for a time equal to the time constant for the growth of low-mode magnetohydrodynamic instabilities, the instabilities should not develop. The experiment described in this article is designed to test this theory. It consists in connecting exploding wires to a three-channel generator of rectangular pulses, one channel of which supplies energy to the wire, the other two being used to form gating pulses supplied to an electronic-optical converter to trigger a camera for photographing the explosion. A diagram of the generator is given. Since the pulse supplied by the generator has a steep leading edge, the time rate of change of the energy supplied to the wire is enormous, of the order of 10^{10} joules/g.sec. The experiments show that rapid explosions in wires of 10^{-3} cm diameter occur without the development of MHD instabilities. The authors express gratitude to A. Z. Potashinskiy for 1/2

USSR

UDC: 537.529

BAYKOV, A. P., et al, Zhurnal tekhnicheskoy fiziki, No 1, 1973,
pp 136-140

his comments and to V. G. Stashevskiy for his assistance with the
experiments.

2/2

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USSR

UDC: 537.533.3

BONDARENKO, Yu. V., BUDARNYKH, V. I., IL'IN, V. P., ISZOL'DSKIY, A. M., NESTERIKHIN, Yu. Ye., POPOVA, G. S., and SHESTAK, A. F.

"Electronic-Optical Converters in Forced Light Load Operation"

Novosibirsk, Avtometriya, No 6, 1971, pp 7-14

Abstract: Forced light load operation is defined as that mode of operation of the photocathode of an electronic-optical converter in which a photocurrent of high density is picked up in recording processes 10^{-9} - 10^{-11} s in duration. In this kind of operation the obtained images are markedly distorted. The function of this paper is to take a closer look at the basic effects tending to deteriorate the image quality through experiments, the purpose of which is to investigate the effect of the electric field near the photocathode and the space charge in causing this distortion. A diagram of the experimental equipment is given and the experimental procedure explained. Photographic samples of the image distortion are shown and the reasons for the defects clarified. The authors express their gratitude to B. A. Baryshev for his assistance in preparing the equipment, and to L. M. Diamant and I. N. Zaydel' for their comments.

1/1

- 70 -

USSR

UDC: 621.383.8 : 621.039.66

BARYSHEV, B. A., GYAVGYANEN, L. V., DIAMANT, L. M., ISKOL'DSKIY, A. M., KRASNOGOLOVYY, I. I., and NESTERIKHIN, Yu. Ye.

"Nanosecond Electronic-Optical Photorecorder 'Channel' With Amplified Image Brightness"

Novosibirsk, Avtometriya, No 6, 1971, pp 53-58

Abstract: This paper represents a continuation of the work being done by the Institute of Automation and Electrometry on the design of devices for parallel recording and processing of optical signals obtained in the investigation of nanosecond and subnanosecond processes. A description is given in this paper of a multistage electronic-optical converter, developed by the authors, which has an electrostatic input chamber and two stages of image brightness magnification. A photograph and a functional diagram of the converter are given. Some of the advantages of this "Kanal" (Channel) instrument are low exposure time in frame operation, high electric field intensity near the photocathode due to the presence there of a control grid, a larger screen, high noise immunity, and a type of structure permitting assembly-line production by the Ministry of the Electronics Industry. The authors thank Yu. A. Shapiro for making the numerical computations, V. Yu. Sholokhov, Yu. N.

1/2

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USSR

UDC: 621.383.8 : 621.039.66

BARYSHEV, B. A., et al, Avtometriya, No 6, 1971, pp 53-58

Yevgrafov, and V. A. Gubachenko for their help in the structural development of the instrument, and V. D. Prilepskikh for helping prepare the apparatus.

2/2

Recorders and Transducers

UDC: 53.08+535.853

USSR

BAGLAY, R. D., ISKOL'DSKIY, A. M., KUDRYASHOV, M. I., and
NESTERIKHIN, Yu. Ye.

"Electron-Optical Recorder 'Spectrum' as an Element in Automated
Spectrum Investigation Systems"

Novosibirsk, Avtometriya, No 6, 1971, pp 24-41

Abstract: The Soviet spectral recording device "Spektr" (Spectrum) performs rapid conversion of unidimensional spatial distributions of electric signals and records them, by means of an oscilloscope, on photographic film. The recording system in the device is a double electronic-optical converter with electrostatic focusing and electron-beam deflection, given the designation LI-602. The purpose of this article is to consider the system errors and noise in the LI-602, describe the structure of the mechanical and electronic blocks in it, set up its mathematical model as a passive filter, present the results of typical experiments performed with data processing equipment, and propose several methods for eliminating systematic and random errors. A photograph of the device is reproduced together with some samples of the oscillographic output. Credit for assisting in the work is given to L. P. Baykov and V. D. Prilepskikh

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USSR

UDC: 53.08+535.853

YEFIMOV, V. M., ISKOL'DSKIY, A. M., and YANSHIN, E. V.

"Detection of a Point Signal in Noise for Images of Discrete Structure"

Novosibirsk, Avtometriya, No 6, 1971, pp 42-52

Abstract: In the photographic recording of small objects of low brightness, as in the registration of weak stars or laser location of the moon, a method of increasing the sensitivity of the recording equipment is through an electronic-optical converter. Since the use of high-gain converters in such recording systems involves substantial difficulties because of the limitations in the dynamic range of the photomaterial used as the memory device, the authors of this article analyze the possibilities of the traditional method of single-frame memory and propose methods for broadening these possibilities. Multiframe memory is also discussed. Experiments are described to determine the probability of detection of the point signal in noise, and a description of

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USSR

YEFIMOV, V. M., et al., Avtometriya, No 6, 1971, pp 42-52

the experimental apparatus is given. Formulas are derived for accurate computation of this probability if the noise in question is generated by an outside source. The authors thank Yu. Ye. Nesterikhin for posing the problem, Yu. A. Grigor'yevich for assisting in the experiments and discussing the results, and G. D. Frizen for making the required computations on the electronic computer.

2/2

Titanium

USSR

UDC: 621.791:669.295

RUSSO, V.L. (Doctor of Techn. Sciences), KUDOVYAROV, B.V. and ISKOZ, B.B.
(Candidates of Techn. Sciences), NIKOLAYEV, A.A., POLYAKOV, V.M., BARKAN, Z.M.,
LYAMIN, A.M., and GRINFEL'D, R.A. (Engineers)

"Semi-Automatic Butt Welding of Heavy-Gage Titanium Alloys Without Grooving"

Moscow, Svarochnoye Proizvodstvo, No 10, Oct 71, pp 20-21

Abstract: The most advanced welding techniques are those which provide high-capacity joints with geometric shapes offering maximum strength of the weld metal interlayer on contact with the much stronger base metal. This article discusses manual consumable-electrode welding technology for butt joints of titanium alloy plates, 20 to 100 mm thick. The test material was VT5 titanium alpha-alloy (base metal) with a tensile strength from 75 to 82 kg/mm². VT1 alloy was the filler wire (tensile strength 40-43 kg/mm²). A formula is given for calculating the value at which the weld joint tensile strength will be equal to that of the base metal. A curve is shown to demonstrate the effect of interlayer dimensions on the tensile strength of the weld. The mechanical properties of the interlayer are generally determined by two factors: the properties of the filler or electrode metal (weld metal) and the share of the base metal in the weld metal. Ultrasonic quality control of the test welds revealed faulty fusions in some weld areas. Use was made of a special jig

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USSR

RUSSO, V. L., et al, Svarochnoye Proizvodstvo, No 10, Oct 71, pp 20-21

to maintain the angle of the electrode to the weld, prevent vibrations, and monitor a constant welding rate. The welding was done on a PGT-2 semi-automatic welder. The mechanical properties of both the weld metal and the joint on specimens (6 mm in diameter) include a tensile strength of 64.6 kg/mm², a yield point of 56.5 kg/mm², an elongation of 14 percent, an area reduction of 39.2 percent, a notch toughness (round notch) of 9.8 kg/mm², and a bending angle of 120° (on specimens with longitudinal welds). The value at which the weld joint is equal in tensile strength to that of the base metal was established at 0.1 to 0.35 and the ratio is $\frac{w.m.}{t.s.} / \frac{w.m.}{t.s.}$.

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USSR

UDC: 629.7.018:621.365.42

ISKRA, A. L., MALYSHEV, L. A., POPOV, V. Ye., SOBOLEV, A. A.

"A High-Temperature Ohmic Gas Heater"

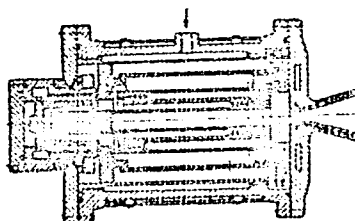
Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 10, Apr 73, Author's Certificate No 369449, Division G, H, filed 7 Apr 71, published 8 Feb 73, p 121

Translation: This Author's Certificate introduces a high-temperature gas heater, e. g. for a hypersonic wind tunnel. The device contains a housing with a gas feed system, heating elements of a porous current-conducting material, and a prechamber. The heating elements are made in the form of hollow split coaxial cylinders which form a labyrinth cavity between them. As a distinguishing feature of the patent, the range of operating conditions in the wind tunnel is extended by placing an interchangeable ceramic inset between the labyrinth cavity and prechamber of the heater. The inset has holes through it, and can be changed to vary the route of flow of the gas through the porous heating elements.

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USSR

ISKRA, A. L. et al., USSR Author's Certificate No 369449



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USSR

UDC 629.78.015.018.1

ISKRA, A. I., POPOV, V. Ye.

"Safety Valve Designed For High Rates of Gas Flow"

Uch. zap. Tsentr. aerodinam. in-ta (Scientific Notes of the Central Aerohydrodynamic Institute) 1971, Vol 2, No 2, pp 126-128 (from Referativnyy Zhurnal, Raketostroyeniye, No 11, Nov 71, Abstract 11.41.195, Resume)

Abstract: Construction of a high speed safety valve designed for high gas flow rates, used in aerodynamic tunnels of periodic operation, which operate from high pressure tanks, is considered. A method of determining the motion of the closing element (cup), and test results of a valve with passage 0.5 m in diameter are presented. It is shown that test results and design data coincide with sufficient accuracy. 3 figures.

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USSR

UDC 576.851.55.094

LISENKO, A. I., CHERNYAVS'KIY, V. I., KULAKOVA, G. S., and ISKRITS'KIY, G. V., Khar'kov Scientific Research Institute of Vaccines and Sera,
Khar'kov

"Ultrastructure of Type E Clostridium botulinum During the Process of Toxin Formation"

Kiev, Mikrobiologichniy Zhurnal, Vol 35, No 3, May-Jun 73, pp 308-312

Abstract: The structure of Cl. botulinum in relation to the amount of toxin formed during cultivation at 24-26° in Martin broth + 3% dextrin was studied by electron microscopy. It was established that while a small amount of toxin entered the medium in the initial stages of development of the bacterial population, the principal quantity of toxin was released in the stage of logarithmic death of the bacterial cells. At the time of the highest toxin activity, the maximum amount of cells with a destroyed wall was observed and the cells exhibited a lowered electron-optical density of the cytoplasm.

1/1

USSR

UDC 612.015.31+612.014.4

YUNUSOV, A. Yu., MAKHMUDOV, E. S., and ISLAMGALIYEVA, F. , Physiology Division
Academy of Sciences, Uzbek SSR, Tashkent

"Water-Electrolyte Metabolism in Persons From Different Climatic Zones After
Exposure to High Temperatures"

Leningrad, Fiziologicheskii Zhurnal SSSR, No 8, 1971, pp 1,198-1,202

Abstract: Various indexes of water-electrolyte metabolism were studied in local inhabitants in Tashkentskaya Oblast in Central Asia and in persons who had come there from temperate and cold regions of the Soviet Union. The measurements were made during the summer when temperatures of 28 to 34° and relative humidity of 30 to 40% prevailed. Newly arrived individuals from temperature regions consumed 68.6% more liquid than did the local inhabitants, lost more than twice as much extrarenal water, and exhibited a slight decrease in diuresis and sharp decrease in sodium (by 46.5%) and potassium (by 34.6%) content in the urine. The amount of sodium and potassium in sweat was, respectively, six times and twice as high as in the local inhabitants. Blood sodium increased while blood potassium decreased. These differences in metabolic indexes were much more pronounced in those who had come from cold regions. But after the individuals remained in the Tashkent area for over one

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USSR

YUNUSOV, A. Yu. et al., Fiziologicheskii Zhurnal SSSR, No 8, 1971,
pp 1,198-1,202

year, all the above indexes decreased (an indication of adaptation to the new conditions), but not to the level characteristic of the local population.

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Nuclear Physics

3

USSR

UDC: 539.172.12

AZIMOV, S. A., ARIFKHANOV, U. R., GULYAMOV, M., ISLAMOV, B. I.,
ISKHAKOV, T., FAYZULLAYEV, U. I., ERGASHOV, E., Institute of
Nuclear Physics, Academy of Sciences of the Uzbek SSR

"The Reaction ${}^7\text{Li}(\text{pn}){}^7\text{Be}$ at $E_p = 17.5$ MeV"

Moscow, Izvestiya Akademii Nauk SSSR: Seriya Fizicheskaya,
Vol 36, No 1, Jan 72, pp 173-174

Abstract: The neutron spectrum of the reaction ${}^7\text{Li}(\text{pn}){}^7\text{Be}$ is studied on a proton beam in the U-150 cyclotron at the Institute of Nuclear Physics at the Academy of Sciences of the Uzbek SSR, using a multichannel, fast-neutron, time-of-flight spectrometer. The measurements were made at a proton energy of 17.5 MeV. The experimental data enabled the authors to distinguish neutron groups n_0 and n_1 corresponding to the ground and excited states of ${}^7\text{Be}$ ($E^* = 0.43$ MeV). Differential cross sections of the reaction are presented, with formation of neutron groups corresponding to the ground and excited states ($E_1^* = 0.43$ MeV and $E_2^* = 4.55$ MeV). All curves have a

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USSR

. AZIMOV, S. A. et al., IAN SSSR: Ser. Fiz., No 1, 1972, pp 173-174

diffraction structure with a first maximum at $\theta = 0^\circ$ for n_0 and n_1 and a first maximum at $\theta = 20^\circ$ for group n_2 . The curves for n_1 and n_2 are antisymbatic. Three figures, bibliography of six titles.

2/2

- 03 -

USSR

UDC: 621.315.52

AZIMOV, S. A., SULTANOV, N. A., ISLAMOV, L., and NAGMATOV, R. N.

"Infrared Quenching of the Photoconductivity of Silicon With a Nickel Impurity"

Leningrad, Fizika i Tekhnika Poluprovodnikov, No 9, September 1973, pp 1837-1839

Abstract: The purpose of this paper is to supplement the data already gathered concerning Ni energy levels in silicon by measuring the long-wave limits of the photoconductivity-quenching spectral distribution. The nickel was diffused in the silicon from a sputtered layer at a temperature of 1200° C in air for 10-30 hours. The initial silicon was n-type monocrystalline with an electron concentration of $2 \cdot 10^{13}/\text{cm}^3$ to $8 \cdot 10^{13}/\text{cm}^3$. After the diffusion, the specimens maintained their n conductivity but their resistivity increased to the order of 10^2 - 10^3 ohms.cm. The spectral distribution measurements were conducted with the SPM-2 monochromator with a LiF prism, using d-c and at 80° K, and a constant white light was used to observe the infrared quenching of the photoconductivity. The spectral distribution curve is presented. A model for the

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USSR

UDC: 621.315.52

AZIMOV, S. A., et al, Fizika i tekhnika poluprovodnikov, No 9,
September 1973, pp 1837-1839

mechanism of the quenching is proposed, together with an explanatory
diagram.

2/2

USSR

UDC 621.791.756:669.15-194

REMIZOV, V. YE., RAVIN, M. M., and ISLAMOV, R. N., Moscow

"Electroslag Welding of High-Strength Steel"

Kiev, Avtomaticheskaya Svarka, No 3, Mar 71, pp 49-51

Abstract: In order to improve the process of manufacturing high-pressure containers, it is desirable to replace forged pieces with welded billets of KVK32 sheet steel with $\delta = 30$ mm and an ultimate strength $\sigma_b \geq 160$ kg/mm². This article contains a study of the properties of electroslag welds of billets of this type. The experiment was performed in two stages: preliminary checking of the properties of KVK32 steel joints obtained by electroslag welding and selection of the optimal version of the process and, secondly, welding of rings by this process. It was established that the microstructure of the base metal, the weld, and the fusion line is fine-grained and uniform. The structure of the weld metal is larger grained than that of the fusion line. After quenching and annealing, the structure of the weld-affected zone is fine-grained martensitic, and the weld metal is coarse-acicular martensitic. The test demonstrated that

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USSR

REMIZOV, V. YE., et al., Avtomaticheskaya Svarka, No 3, Mar 71,
pp 49-51

20KhSNVFA wire with AN-8 and AN-15 fluxes is unsuitable for
electroslag welding of high-strength steel, but OKh4MA or SP28
wire and AN-8 and AN-15 fluxes give results on the level of
the corresponding indexes of the base metal.

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USSR UDC 619:616.9-022.7+636.2+636.3+636.4+636.52/.58

ISLAMOV, R. Z.; IOGANSON, T. N.; KOLOMAKIN, G. A.

"Dogs as Possible Sources of Brucellosis on Swine-Breeding Farms"

Tr. In-ta Krayev. patol. KazSSR (Works of Institute of Regional Pathology of the Kazakh SSR, No 20, 1970, pp 17-20 (from RZh-58. Zhivotnovodstvo i Veterinariya, No 4, Apr 71, Abstract No 4.58.632)

Translation: Epizootiological analysis of a swine-breeding establishment threatened with brucellosis was performed. It was concluded that at such a focus, dogs might be contaminated with *Br. suis* and apparently can transmit the latter to susceptible sows.

1/1

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1/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--ANALYSIS OF THE OPERATION OF THE CENTRAL GAS FRACTIONATION PLANT OF
PLANT THE LOWER KAMA PETROCHEMICAL COMBINE -U-
AUTHOR--(05)--VOLFSON, I.S., KONSTANTINOV, YE.N., KOZIN, V.A., DIMITRIYEV,
A.P., ISLAMOV, SH.KH.
COUNTRY OF INFO--USSR

SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (2), 20-3

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BUTANE, PROPANE, GAS, PETROCHEMISTRY, CHEMICAL PLANT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1996/1514

STEP NO--UR/0318/70/000/002/0020/0023

CIRC ACCESSION NO--AP0118501

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118501

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN C SUB2 H SUB6 COLUMN INSTEAD OF A FRACTIONATION ABSORBER AND A LOWER COOLING WATER TEMP. REDUCED THE LOSSES OF THE C SUB3 H SUB8-C SUB4 H SUB10 FRACTION OF THE DRY GAS. THE OPERATING COSTS INCREASED WHEN A SIMILAR QUALITY LEVEL WAS OBTAINED WITH ANALOGOUS TEMP. AND PRESSURE IN THE FRACTIONATION ABSORBER. BUBBLE CAPS INSTEAD OF GRID PLATES IN THE DISTN. COLUMNS PROVIDED HIGHER AND STABLE PURITY OF THE FRACTIONS, THE EFFICIENCY OF THE FORMER BEING TWICE AS HIGH. THERMOSIPHON REBOILERS INSTEAD OF FURNACES FOR HEATING THE COLUMN BOTTOMS IMPROVED THE OPERATION CONTROL AND VERSATILITY.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--GAMMA RAY SPECTRUM OF THE CERIUM 134 YIELDS LANTHANUM 134 YIELDS
BARIUM 134 CHAIN -U-
AUTHOR-(04)-ABDURAZAKOV, A.A., GROMOV, K.YA., ISLAMOV, T.A., SIBIROV, B.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(4), 734-9
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GAMMA RAY, SPECTRUM, CERIUM ISOTOPE, LANTHANUM ISOTOPE, BARIUM
ISOTOPE, IRRADIATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3008/2031 STEP NO--UR/0048/70/034/004/0734/0739

CIRC ACCESSION NO--AP0138885
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0138885

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PRIME134 CE YIELDS PRIME134 LA YIELDS PRIME134 BA DECAY CHAIN WAS STUDIED BY 9 GROUPS STARTING IN 1951. RECENTLY, RADIOACTIVE CE WAS OBTAINED IN THE IRRADN. OF GO FOIL BY 660 MEV P FROM THE DUBNA SYNCHROCYCLOTRON, AND WAS SEPD. BY CHROMATOG. THE GAMMA RAY SPECTRUM WAS STUDIED BY USING A GE(LI) SPECTROMETER. THE RESULTS ARE COMPARED WITH THOSE OBTAINED RECENTLY BY DZHELEPOV, ET AL. (1969) AND ABDUL-MALEK AND HAUMANN (1968). A SCHEME OF LEVELS OF PRIME134 BA IS PROPOSED. FACILITY: OB'EDIN, INST. YAD. ISSLED., DUBNA, USSR.

UNCLASSIFIED

USSR

UDC 591.105:598.126

ISLAMOVA, G., Institute of Biochemistry, Academy of Sciences Uzbek SSR

"Comparative Study of Oxidase-l-Amino Acids in Venoms of Five Central Asian Snake Species"

Tashkent, Uzbekskiy Biologicheskii Zhurnal, No 3, 1970, pp 2-5

Abstract: A comparative study was made of oxidase-l-amino acids in venoms of five Central Asian snake species: the cobra (*Naja oxiana*), Pallas shchitomordnik (*Ancistrodon halys*), saw-scaled viper (*Echis carinatus*), blunt-nosed viper (*Vipera lebetina*), and Renard's viper (*Vipera ursini*). Lyophilized two- and three-year old venoms were dried over calcium chloride. The activity of oxidase-l-amino acids was determined by paper chromatography. The study established (average values of six to seven determinations) that the blunt-nosed viper, Pallas shchitomordnik, and Renard's viper showed the highest activity for these amino acids. The remaining venoms had lower amino-acid activity.

1/1

USSR

UDC 519.210

SARYMSAKOV, T. A., KUCHKAROV, Ya Kh., and ISLAMOVA, Kh. Ya.. Taskent State University imeni V. I. Lenin

"Upper and Lower Functions for Series of Independent Random Numbers"

Izvestiya Akademii Nauk Uzbekskoy SSR, Seriya Fiziko-Matematicheskikh Nauk (News of the Academy of Sciences Uzbek SSR, Physico-Mathematical Sciences Series) No 5, 1970, p 20-27

Abstract: Necessary and sufficient conditions are given for a series of functions to belong to an upper or lower class. The results obtained are generalized from those of W. Feller (Transactions of the American Mathematical Society, Vol 54, 1943, p 373 and p 361) and extended to unbounded random numbers. The authors examine a topological space consisting of a full topological half-field, a topological Boolean algebra of its idempotents, a maximal co-final, and a measure defined on the maximal co-final. A series of independent random numbers having zero mathematical expectation and finite dispersion is considered. Conditions are given for series of functions to belong to upper or lower classes, depending on the convergence or divergence of other series as defined by derived relations. Three theorems are given with proofs. Orig. art. has 5 refs.

1/1

- 42 -

USSR

UDC 539.374

PANFEROV, V. M., ~~ISHAGILOV, R. KH.~~, IL'IN, L. M., KOROL', YE. Z., TYURIN, V. F.

"Deformation of a Solid State in the Case of Complex Loading where the Major Axes of the Stress and Strain Tensors Remain Stationary"

Nauch. tr. In-t mekh. Mosk. un-ta (Scientific Works of the Mechanics Institute of Moscow University), 1971, No 8, pp 5-21 (from RZh-Mekhanika, No 11, Nov 71, Abstract No 11V365)

Translation: A version of plasticity theory is proposed which is adapted for the description of the stressed and strained states of a solid state during small elastic-plastic flows in the case where the major stress and strain axes are stationary; the theory is based on the tensor-line relation between the deviators of the stresses, strains and deformation rates. A description of the tested device built at the Mechanics Institute of Moscow State University which permits programmed loading of tubular test pieces under an axial force and internal pressure is presented. Results are presented from experiments performed on this device to check the hypotheses assumed in the proposed version of plasticity theory.

1/1

- 104 -

USSR

UDC 547.298.6

ISMAGILOV, R. K., YAFAROVA, R. L., and RAZUMOV, A. I.

"Reaction of Ethyl Chloroformate with Potassium Derivatives of Diphenylphosphonylacetic Ester"

Leningrad, Zhurnal Obshchey Khimii, Vol 42 (104), No 9, Sep 72, p 2113

Abstract: The potassium derivative obtained from ethyl ester of diphenylphosphonylacetic acid and ethylchloroformate was stirred for 3 hrs at 50-60° in toluene producing $(C_6H_5)_2P(O)CK(COOC_2H_5)_2$, which upon acidification with 5% HCl

yielded $(C_6H_5)_2P(O)CH(COOC_2H_5)_2$, m. p. 119-121°. Removing toluene from the residue followed by extraction with hexane-ether precipitated $(C_6H_5)_2P(O)CH_2COOC_2H_5$, m. p. 74-76°. Evaporation of the solvent yielded $(C_6H_5)_2P(O)OC_2H_5$,

b. p. 145-150° (0.1 mm). The residue from the extraction represented tarry product $(C_6H_5)_2P(O)CH_2C(O)CHKCOOC_2H_5$.

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USSR

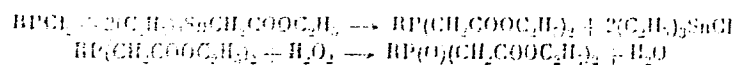
UDC: 547.298.6

ISEAGILOV, R. K., RAZUMOV, A. I., YAFAROVA, R. L., Kazan' Institute of Chemical Technology imeni S. M. Kirov

"Research in the Series of Phosphinic and Phosphinous Acid Derivatives. LXXXIV. Methyl(Aryl)-bis(carbohydrazinomethyl) phosphine Oxides and Some of Their Properties"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 6, Jun 72, pp 1248-1249

Abstract: Continuing their research on synthesis of dihydrazides of phosphorylated dibasic carboxylic acids, the authors investigated compounds containing both carbohydrazinoalkyl groups associated with the phosphorus atom, i.e. compounds of the type $RP(O)(CH_2C(O)NNH_2)_2$. The alkyl(aryl)bis(carboethoxymethyl)phosphine oxides required for the synthesis were obtained by reacting ethyl triethylstannylacetate with primary dichlorophosphines with subsequent oxidation of the tertiary phosphines:



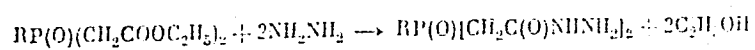
The synthesized tertiary phosphines add sulfur with heating. Methyl(aryl)bis(carboethoxymethyl)phosphine oxides react with hydrazine hydrate to form

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USSR

ISMAGILOV, R. K., et al., Zhurnal Obshchey Khimii, Vol 42(104), No 6, Jun 72,
pp 1248-1249

the corresponding dihydrazides:



The properties of the synthesized compounds are summarized in tabular form.

2/2

- 24 -

USSR

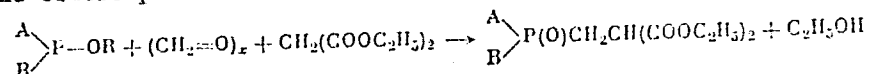
UDC 547.241

RAZUMOV, A. I., YAFAROVA, R. L., and ISMAGILOV, R. K., Kazan Chemical-Technological Institute imeni S. M. Kirov

"An Investigation into a Series of Derivatives of Phosphinic and Phosphinous Acids. LXXV. Synthesis and Certain Properties of Esters and Hydrazides of Phosphinylmethylmalonic Acid"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 5, May 1971, pp 1022-1024

Abstract: In studying the derivatives of phosphorylated carboxylic acids, which have shown high biological activity, the synthesis of phosphorylated dibasic carboxylic acids was used as a basis for the present work. The synthesis of the esters proceeded as follows:



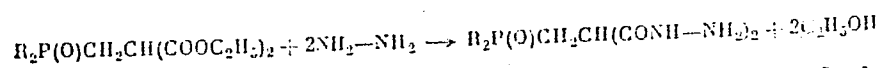
The resulting liquids were colorless, odorless and miscible with alcohol and acetone. The dihydrazide was produced in high yields from the esters as follows:

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USSR

RAZUMOV, A. I., et al., Zhurnal Obshchey Khimii, Vol 41, No 5, May 1971,
pp 1022-1024



The product was a crystalline compound soluble in water and alcohol, but not ether.

USSR

UDC 518.12

ISMAGILOV, R. S., SHEBEKO, S. A.

"Obtaining Realizable Transfer Functions of Optimal Systems"

Tr. Mosk. in-ta elektron. mashinostr. (Transactions of the Moscow Institute of Electronics Machine Building), No 15, 1971, pp 129-136 (from Referativnyy Zhurnal -- Matematika, No 7, July 71, Abstract No 7B988, by helikhova)

Translation: For the case in which a useful signal is applied at a system input in the form of a polynomial of degree $r-1$ along with "white noise," conditions are determined that must satisfy the approximating e^{-pT} fractionally-rational Pade function in order that the resulting realizable optimal transfer function exactly satisfies the main quality factor of an optimal system with a finite observation time. It is shown that the approximation e^{-pT} by a Pade polynomial is the optimum, since it provides an exact value for the main quality factor of the system for the smallest power of the approximating polynomial.

I/I

UDC 547.241

USSR

NURTDINOV, S. Kh., ISMAGILOVA, N. M., MAMINA, A. I., ZYKOVA, T. V., and
TSIVUNIN, V. S., Kazan' Chemical Technological Institute imeni S. M. Kirov

"Reaction of Trivalent Phosphorus Acid Chlorides With Esters of Pyruvic
Acid"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 12, Dec 73, pp 2645-2648

Abstract: The reactions of trivalent phosphorus acid chlorides with pyruvic acid esters have been investigated; the reaction products are alkyl(aryl)-(1-chloro-1-carbalkoxy)ethylphosphinous acid chlorides. When diethylchlorophosphine is reacted with ethylpyruvate, an oxide of diethyl(1-carboethoxyethyl)phosphine and diethylphosphinous acid chlorides are formed.

1/1

USSR

UDC 547.341

NURTDINOV, S. KH., ~~ISMAGILOVA, N. M.~~, NAZAROV, V. S., ZYKOVA, T. V.,
SALAKHUTDINOV, R. A., SULTANOVA, R. B., and TSIVUNIN, V. S., Kazan' Chemical-
Technological Institute Imeni S. M. Kirov

"Reaction of Aryl- and Diarylchlorophosphites With Cyclic Ketones"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 6, Jun 73, pp 1251-1254

Abstract: Phenyl- and diphenylchlorophosphites react with equimolar quantities of cyclohexanone and cyclopentanone upon heating to 130-150° for 17-20 hrs in a closed system, yielding the respective esters of cyclohexen-1-yl(cyclopenten-1-yl)phosphonic acids. The diphenyl ester of cyclohexen-1-ylphosphonic acid (I) reacts with phosphorus pentasulfide converting to the thiophosphonic acid derivative. Bromine adds across the double bond of (I) producing a dibromide which can be dehydrobrominated to diphenyl ester of 2,6-cyclohexadiene-1-ylphosphonic acid.

1/1

USSR

UDC 547.476.053

NURTDINOV, S. Kh., ~~ISMAGILOVA, N. M.~~, ZYKOVA, T. V., SALAKHUDINOV, R. A.,
TSIVUNIN, V. S., and KAMAY, G. Kh., Kazan' Chemico-Technological Institute
imeni S. M. Kirov

"Reaction of Alkyldichlorophosphines With Chlorides of Carboxylic Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 11, Nov 1971, pp 2,486-2,490

Abstract: The reactions of phosphines and other phosphorus derivatives with various acids and acid derivatives have been studied, but no information on alkyldichlorophosphines has thus far been published. The authors studied six members of this group in reactions with acyl chlorides of carboxylic acids. Products in the case of acetyl and benzoyl chlorides, following treatment with the adducts with alcohols, consisted of the esters of the alkylketo-phosphinic acids; in the case of di- and trichloroacetyl chlorides, they consisted of vinyl esters of pentavalent phosphorus acids. Procedural details of tests and physical constants of end-products are given.

1/1

USSR

UDC 519.2

VISKOV, O. V., ISMAILOV, A. I.

"Queueing System with a Limited Queue"

Nauch. tr. Tashkent. un-t (Scientific Works of Tashkent University), 1972, vyp. 402, pp 17-29 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V77)

Translation: A study was made of the nonstationary probability distribution of the states of a linear Markov process describing the functioning of the system $M|G|1|n$ (with a limited queue). The recurrent relations are found which relate the probability of the states of the systems to various values of the maximum length of the queue. The characterization of the system $M|u|1|n$ in the class of systems of the type $M|M|1|n$ is indicated.

1/1

USSR

UDC 547.972/73

RAKHIMKHANOV, Z. B., SADYKOV, A. S., ISMAILOV, A. I., and KARIMDZHANOV, A. K.,
Scientific Research Institute of Chemistry and Technology of Cotton Cellulose,
Tashkent

"Anthocyanins of Hibiscus Cannabinus"

Tashkent, Khimiya Prirodnikh Soyedineniy, No 6, 1971, pp 723-727

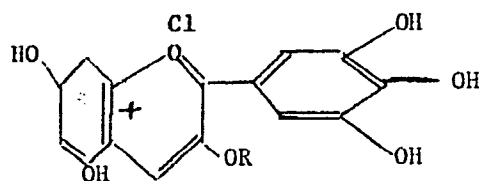
Abstract: A study was made of the anthocyanins of Hibiscus cannabinus var. simplex (kenaf). Two anthocyan glycosides were isolated from the flowers of this plant. One of them was the new glycoside called cannabinin and the other, myrtilin, which was isolated from kenaf flowers for the first time. The ratio of cannabinin to myrtilin in the kenaf anthocyanins was about 4:1. Experimental procedures, yields and some physical and chemical characteristics of the products are presented for isolation of the anthocyanins, obtaining cannabinin, acid hydrolysis of cannabinin, fermentative hydrolysis of cannabinin, oxidation of cannabinin with hydrogen peroxide, acid hydrolysis of bioside, isolation of myrtilin, acid hydrolysis of myrtilin, fermentative hydrolysis of myrtilin, oxidation of myrtilin with hydrogen peroxide and basic splitting of delphinidin. The new substance has $\lambda_{\max} = 531$ nm. It is characterized as delphinidin-3- β -D-glucoside- β -D-xyloside (cannabinin):

1/2

- 78 -

USSR

RAKHIMKHANOV, Z. B., et al., Khimiya Prirodnkh Soyedineniy, No 6, 1971,
pp 723-727



R = glucosyl-xyloside

USSR

UDC 612.44+612.11/.12+612.275.1

ISMAILOV, E. I., Kirgiz State Medical Institute

"The Effect of the Thyroid on Hemopoiesis at High Altitudes"

Frunze, Sovetskoye Zdravookhraneniye Kirgizii, No 2, Mar/Apr 72, pp 22-25

Abstract: Hemopoiesis in dogs was studied after removal of the thyroid gland. One group of dogs was under observation in Frunze, and another at an elevation of 3,200 m. During the first 7-9 days after thyroidectomy dogs in the first group did not show any unusual changes either in the peripheral blood, or in the bone marrow. Starting with the 8-10th days a gradual decrease in the hematologic indexes of the peripheral blood was observed which reached its peak at the end of the 2d month when the concentration of hemoglobin decreased by 14.2%, and of erythrocytes, by 11.5%. The volume of circulating blood decreased from 74.8 ml./kg of weight to 63.4 ml./kg, and oxygen absorption by tissues, from 6.12 to 4.9 ml./kg of weight. The concentration of leukocytes decreased 20-25 days after the operation but remained at a sufficiently high level. A slight increase in the hemopoietic activity of the blood serum took place after thyroidectomy. The amount of erythropoietin increased to +16.2 from 7.2. At the same time hemopoiesis slowed down slightly. In the bone marrow the leukoerythroblastosis index 1/2

USSR

ISKAILOV, E. I., Sovetskoye Zdravookhraneniye Kirgizii, No 2, Mar/Apr 72, pp 22-25

increased from 2.8 to 3.2, as well as the number of reticulocytes, from 2.8 to 5.9%. However, the concentration of reticulocytes in the peripheral blood did not increase. When the hemoglobin level in the blood of dogs of the second group decreased maximally, they were taken to a 3,200 m elevation with the hope that this would stimulate hemopoiesis. However, it did not. The anemic condition progressed further, with all the changes observed among animals of the first group in Frunze. In the control group with intact thyroids hemopoiesis increased and the concentration of erythropoietin increased 4-fold with some noticeable increases of other blood elements at the same elevation. At the end of the observation period (4 months) there were no improvements in the condition of dogs at high elevation. This means that thyroidectomy is accompanied by anemia at sea level and at high elevations.

2/2

USSR

UDC 577.3:576.314

ISMAILOV, E. SH., Chair of Human and Animal Physiology, Dagestan State University

"The Mechanism of the Action of Microwaves on the Permeability of Erythrocytes to Potassium and Sodium Ions"

Moscow, Nauchnyye Doklady Vysshey Shkoly, Biologicheskiye Nauki, No 3, 1971, pp 58-60

Abstract: The effects of microwaves on the permeability of human erythrocytes from donor blood to K and Na ions were studied. A suspension containing 54.6% by volume of erythrocytes was subjected for 30 min to the action of microwaves with an intensity of 45 mW/cm² and a frequency in the 1,009.076 MHz range. The temperature of the suspension was kept at 37°. The erythrocytes were suspended in a solution containing K⁺ and Na⁺ in a concentration of 5.099 and 81.566 millimoles/l., respectively. Under the effect of the microwaves, K⁺ was transferred from the erythrocytes into the surrounding solution and Na⁺ from this solution into the erythrocytes in amounts that were established by determining the concentration of these ions in the solution after the experiment and in that of a control suspension kept at 37°. The

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USSR

ISMAILOV, E. SH., Nauchnyye Doklady Vysshey Shkoly, Biologicheskiye Nauki, No 3, 1971, pp 58-60

result indicated that the microwaves could have acted on the structure of the erythrocyte membrane, increasing the passive diffusion of K^+ and Na^+ and lowering the concentration gradient of these ions on the membrane, or exerted a type of action that blocked the active erythrocyte ion transfer. To establish the exact mechanism of the action of microwaves, erythrocyte suspensions were subjected to the action of these waves under similar conditions in the presence of monoiodoacetate, so that the active ion transfer by erythrocytes was inhibited. K^+ were again transferred from the erythrocytes into the solution and Na^+ from the solution into the erythrocytes but in amounts equal to approximately one half of those transferred in the absence of monoiodoacetate. This indicated that 50% of the transfer of K^+ from the erythrocytes and of Na^+ into them under the effect of microwaves was due to inhibition of active ion transfer by the erythrocytes, and 50% to a change in the effective pore area of the membranes. The effective pore area could have changed because of an increase in the diameter of the pores, formation of new pores, or a change in the diameter of the hydrate envelope of the ions.

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USSR

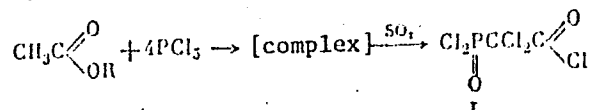
UDC 547.241+546.185*131

ISMAILOV, V. M., MOSKVA, V. V., NOVRUZOV, S. A., RAZUMOV, A. I., AKHMEDOV, SH. T., ZYKOVA, T. V., and SALAKHUTDINOV, R. A.

"Interaction of Phosphorus Pentachloride with Alkyl Acetates"

Leningrad, Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, p 212

Abstract: Under mild conditions (neutral solvent, 15-20°), the interaction of phosphorus pentachloride with alkyl acetates takes place with the formation of phosphorylation products, the nature of which depends on the reagent ratio. With a quadruple excess of phosphorus pentachloride, depending on the alkyl radical in the initial esters (R = Me, Et), the basic product can be the trichloroanhydride of dichlorophosphonacetic acid (I)



With smaller amounts of phosphorus pentachloride, more complex mixtures of products of phosphorylation are formed in which the proportion of the pro-
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USSR

ISMAILOV, V. M., et al., Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, p 212

duct (I) decreases with a decrease in the phosphorus pentachloride taken. This indicates that product (I) is the final product of the presented interaction. The experimental procedure for obtaining the product and infrared and other data confirming its structure are presented.

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TECHNICAL TRANSLATION

1007 | PSTC HT 23-2015-12

29 Aug 72

1. NGLINT TITLE: PROBLEMS OF LASER BEAM DATA TRANSMISSION
PROCEEDINGS OF THE FIRST ALL-UNION CONFERENCE, NIEV,
SEPTEMBER 1968

1. FOREIGN TITLE: PROBLEMY PEREDACHI INFORMATSII LAZERNYH IZDREBYEN

AUTHOR: I. A. DERVIGIN, ET AL.

SOURCE: KIEV ORDER OF LENIN STATE UNIVERSITY
ININT T. G. SCHIEVCHENKO

Translated for PSTC by ACS1

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- 1/111 Page -

1/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--TEMPERATURE DEPENDENCE OF VIBRATIONAL RELAXATION TIMES IN OXYGEN
-U-
AUTHOR--(02)-ISHAYLOV, I., SENKEVICH, A.A.
COUNTRY OF INFO--USSR
SOURCE--AKUST. ZH. 1970. 16(1). 150-2
DATE PUBLISHED-----70

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TOPIC TAGS--OXYGEN, VIBRATION RELAXATION

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PROXY REEL/FRA--1996/1988 STEP NO--UR/0046/70/016/000/0150/0152
CIRC ACCESSION NO--AP0118947
UNCLASSIFIED

the electrolysis of water, it is characterized by absence of visible compounds in it. The microdosing apparatus consists of a stabilized power source, an electrolyzer, and a microbarrel, connected to one another through a microsection. The electrolyzer is filled with a 30% aqueous solution of potassium hydroxide, and the dosed liquid is flushed into the microbarrel. To exclude an effect of the counterpressure of the system on microdosing, a common tube with a needle

212 517

UNCLASSIFIED

PROCESSING DATE--30 OCT 70

CIRC ACCESSION NO--4P0118947

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A FORMULA FOR THE TEMP. DEPENDENCE OF THE ADIABATIC VIBRATIONAL RELAXATION TIME OF D IS DERIVED. THE ADIABATIC VIBRATIONAL RELAXATION TIME OF D IS DERIVED. THE ADIABATIC VIBRATIONAL RELAXATION TIMES CALCD. BY THIS EQUATION FOR D AGREE WELL WITH EXPTL. BETWEEN 200 AND 3500 DEGREES K. FACILITY: MOSK. OBL. PEDAGOG. INST. IN. KRUPSKOI, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 547.476.053
NURTDINOV, S. Kh., ISMAGILOVA, N. M., ZYKOVA, T. V., SALAKHODINOV, R. A.,
TSIVUNIN, V. S., and KAMAY, G. Kh., Kazan' Chemico-Technological Institute
imeni S. M. Kirov

"Reaction of Alkyldichlorophosphines With Chlorides of Carboxylic Acids"
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USSR

UDC 519.2

VISKOV, O. V., ISMAILOV, A. I.

"Queueing System with a Limited Queue"

Nauch. tr. Tashkent. un-t (Scientific Works of Tashkent University), 1972, vyp. 402, pp 17-29 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V77)

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UDC 547.972/73

USSR

RAKHIMKHANOV, Z. B., SADYKOV, A. S., ISMATLOV, A. I., and KARIMDZHANOV, A. K.,
Scientific Research Institute of Chemistry and Technology of Cotton Cellulose,
Tashkent

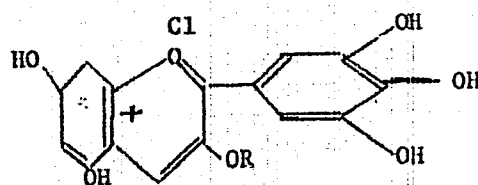
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Tashkent, Khimiya Prirodnykh Soyedineniy, No 6, 1971, pp 723-727

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USSR

RAKHIMKHANOV, Z. B., et al., Khimiya Prirodnkh Soyedineniy, No 6, 1971,
pp 723-727



R = glucosyl-xyloside

USSR

UDC 612.44+612.11/.12+612.275.1

ISMAILOV, E. I., Kirgiz State Medical Institute

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Frunze, Sovetskoye Zdravookhraneniye Kirgizii, No 2, Mar/Apr 72, pp 22-25

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USSR

ISMAILOV, E. I., Sovetskoye Zdravookhraneniye Kirgizii, No 2, Mar/Apr 72,
pp 22-25

increased from 2.8 to 3.2, as well as the number of reticulocytes, from 2.8 to 5.9%. However, the concentration of reticulocytes in the peripheral blood did not increase. When the hemoglobin level in the blood of dogs of the second group decreased maximally, they were taken to a 3,200 m elevation with the hope that this would stimulate hemopoiesis. However, it did not. The anemic condition progressed further, with all the changes observed among animals of the first group in Frunze. In the control group with intact thyroids hemopoiesis increased and the concentration of erythropoietin increased 4-fold with some noticeable increases of other blood elements at the same elevation. At the end of the observation period (4 months) there were no improvements in the condition of dogs at high elevation. This means that thyroidectomy is accompanied by anemia at sea level and at high elevations.

USSR

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"The Mechanism of the Action of Microwaves on the Permeability of Erythrocytes to Potassium and Sodium Ions"

Moscow, Nauchnyye Doklady Vysshey Shkoly, Biologicheskiye Nauki, No 3, 1971, pp 58-60

Abstract: The effects of microwaves on the permeability of human erythrocytes from donor blood to K and Na ions were studied. A suspension containing 54.6% by volume of erythrocytes was subjected for 30 min to the action of microwaves with an intensity of 45 mW/cm³ and a frequency in the 1,009.076 MHz range. The temperature of the suspension was kept at 37°. The erythrocytes were suspended in a solution containing K⁺ and Na⁺ in a concentration of 5.099 and 81.566 millimoles/l., respectively. Under the effect of the microwaves, K⁺ was transferred from the erythrocytes into the surrounding solution and Na⁺ from this solution into the erythrocytes in amounts that were established by determining the concentration of these ions in the solution after the experiment and in that of a control suspension kept at 37°. The

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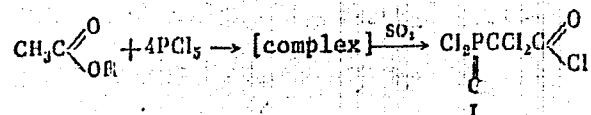
USSR

ISMAILOV, E. SH., Nauchnyye Doklady Vysshey Shkoly, Biologicheskkiye Nauki, No 3, 1971, pp 58-60

result indicated that the microwaves could have acted on the structure of the erythrocyte membrane, increasing the passive diffusion of K^+ and Na^+ and lowering the concentration gradient of these ions on the membrane, or exerted a type of action that blocked the active erythrocyte ion transfer. To establish the exact mechanism of the action of microwaves, erythrocyte suspensions were subjected to the action of these waves under similar conditions in the presence of monoiodoacetate, so that the active ion transfer by erythrocytes was inhibited. K^+ were again transferred from the erythrocytes into the solution and Na^+ from the solution into the erythrocytes but in amounts equal to approximately one half of those transferred in the absence of monoiodoacetate. This indicated that 50% of the transfer of K^+ from the erythrocytes and of Na^+ into them under the effect of microwaves was due to inhibition of active ion transfer by the erythrocytes, and 50% to a change in the effective pore area of the membranes. The effective pore area could have changed because of an increase in the diameter of the pores, formation of new pores, or a change in the diameter of the hydrate envelope of the ions.

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of phosphorylation products, the nature of which depends on the reagent ratio. With a quadruple excess of phosphorus pentachloride, depending on the alkyl radical in the initial esters ($R = \text{Me, Et}$), the basic product can be the trichloroanhydride of dichlorophosphonacetic acid (I)



With smaller amounts of phosphorus pentachloride, more complex mixtures of products of phosphorylation are formed in which the proportion of the pro-
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UDC 547.241+546.185'131

ISMAILOV, V. M., MOSKVA, V. V., NOVRUZOV, S. A., RAZUMOV, A. I., AKHMEDOV, SH. T., ZYKOVA, T. V., and SALAKHUTDINOV, R. A.

"Interaction of Phosphorus Pentachloride with Alkyl Acetates"

Leningrad, Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, p 212

Abstract: Under mild conditions (neutral solvent, 15-20°), the interaction

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ISMAILOV, V. M., et al., Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, p 212

duct (I) decreases with a decrease in the phosphorus pentachloride taken. This indicates that product (I) is the final product of the presented interaction. The experimental procedure for obtaining the product and infrared and other data confirming its structure are presented.

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